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ABSTRACT

Although not all instructional goals can be expressed as behavioral objectives, most of them should be. Behavioral objectives are advantageous because they (a) aid in communicating instructional goals, (b) provide direction for teachers, (c) provide motivation and direction for students, (d) facilitate identification of prerequisite knowledge or skills, (e) aid in evaluation of both student and program, and (f) are crucial to the "Mastery Learning" approach to instruction. The following conditions, however, must be satisfied for behavioral objectives to facilitate instruction and evaluation: (a) the overall list of course objectives must include every outcome the teacher hopes to establish, (b) each objective must accurately describe the behavior which reflects the learning outcomes a teacher intends to establish, (c) each objective must be stated at an appropriate level of generality, (d) each objective must be stated in concise terms, and (e) course objectives must be written and communicated to students in advance of instruction. If even one of these conditions is not met, the behavioral objectives approach is likely to inhibit, instead of facilitate, the instructional process. (PB)

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THE FUNCTIONAL LIMITS OF BEHAVIORAL OBJECTIVES

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- INTRODUCTION -

Few, if any, major developments in education escape controversy. The recent stress on accountability or demonstrated instructional results revives a long-standing and unresolved controversy regarding the use of behavioral objectives as a way of stating educational goals. The central issue in the behavioral objectives controversy is not whether instructional goals CAN be expressed as behavioral objectives. Rather, the crucial question is, SHOULD goals be expressed in this manner? The unresolved status of the controversy is suggested by the responses of educators to this question.

Some, for example, insist that ALL instructional goals should be phrased in behavioral terms such as the following: "The student will state the correct time to the nearest minute for at least nine of any ten clock settings." This position has been bolstered by the accountability movement. Proponents argue that objectives of this type provide clear directions to teachers during instructional planning; provide similar directions to students during learning activities; and suggest meaningful procedures and criteria by which to evaluate and report learning outcomes.

At the other extreme are those educators who insist that NO instructional goals should be expressed as behavioral objectives. This group contends that goals should be stated in more general terms such as the following: "Students will learn to tell time." Support for this position is rarely articulated in precise terms. However, proponents seem to suggest that behavioral objectives describe learning outcomes in narrow terms, and thereby fail to capture the essence of what we are really trying to teach.

As in all controversies, the most sensible position probably lies somewhere between the two extremes. We maintain that MOST, but not all instructional goals should

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be expressed as behavioral objectives. This position is based on the argument that translating general goals into behavioral objectives will usually facilitate instruction (it will always facilitate evaluation). However, we also recognize that the instructional advantages will not hold in all situations.

This paper will first briefly state some general advantages of behavioral objectives. Next, it will identify the conditions which must be satisfied in order for behavioral objectives to facilitate the instructional process. The paper will then consider situations in which these conditions are typically not satisfied. This discussion will thereby pinpoint the functional limits of behavioral objectives.

- THE GENERAL ADVANTAGES OF BEHAVIORAL OBJECTIVES -

The literature abounds with descriptions of the advantages of behavioral over nonbehavioral statements of instructional goals (e.g. McAshan, 1970; Popham, 1969; Vargas, 1972). The following summary is limited to a description of some of the significant advantages which have been cited. In the interests of brevity, these advantages are listed without elaboration.

In general, behavioral objectives . . .

1. Provide an effective form of communicating instructional goals to others: students, parents, other teachers, etc. Behavioral statements are more easily understood and less ambiguous than objectives stated in nonbehavioral terms.

2. Provide direction to teachers during the development and implementation of instructional strategies. A teacher can focus instruction and assignments on the behavioral outcomes which each objective describes and thereby improve both the efficiency and effectiveness of instruction.

3. Function as a source of motivation and direction to students. When students are provided a list of explicitly stated course objectives, they have a clear notion of where to focus their study efforts.

4. Facilitate the identification of prerequisite knowledge or skills. When prerequisites are not specified and accounted for in the instructional sequence, many students are destined to failure.

5. Provide a description of the evaluation procedure (example: "Given any twenty problems involving the addition of three or less one digit numbers, the student will derive the correct sum.") These descriptions will be of great value to

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teachers in their efforts to construct evaluation instruments and to students in their efforts to prepare for assignments or examinations.

6. Suggest the areas of student performance a teacher should focus upon in assessing the effectiveness of instruction. A teacher may contrast actual learning outcomes with the desired levels of performance described in behavioral objectives. These data may suggest the need for revisions in the statement of objectives and/or in the instructional procedure the teacher has used.

7. Are crucial to the development and implementation of the "Mastery Learning" approach to instruction. The "criterion level," for example, provides a general standard which might be used to determine when a student should be advanced to the next objective or unit in the sequence and when he should be retained for further instruction.

8. Are essential to the development of meaningful "criterion referenced" evaluation techniques. With behavioral objectives, it is possible to report student performance in terms of the desired learning outcomes a given student has or has not realized rather than a general description of how each student's performance compares with that of others in his group.

This brief review of the advantages of behavioral objectives is by no means exhaustive. But it should be sufficient to support the position held by the authors that behavioral objectives will usually facilitate instruction and will always enhance evaluation. However, as closer analysis will reveal, certain conditions must be satisfied in order for these advantages to be realized.

- REQUISITE CONDITIONS -

Collectively, the stated advantages of behavioral objectives seem to suggest that if we really want students to be able to do certain things, we should communicate these goals to students in specific terms, teach these same skills, and then test for the same behaviors. Further, if we want all students to satisfy a given objective, we should insist that each individual reach the criterion level of performance on the postest for that objective. Most would accept this as a meaningful approach to the teaching-learning process. However, one feature of this approach warrants careful consideration. When students know which specific outcomes are desired, it is likely that they will concentrate on these behaviors to the exclustion of all other nonstated objectives! As the advantages listed above suggest, this focus should

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result in greater learning efficiency. However, recognition of the fact that students will concentrate their attention in this manner also suggests the need for course objectives to satisfy certain conditions. These conditions are identified in Table 1 below and will serve as the focus of attention throughout this paper:*

TABLE 1: CONDITIONS WHICH MUST BE SATISFIED IN ORDER FOR BEHAVIORAL OBJECTIVES TO FACILITATE INSTRUCTION AND EVALUATION:

Condition #1:	The overall list of course objectives must include every outcome the teacher hopes to establish.
Condition #2:	Each objective must accurately describe the behavior which reflects the learning outcomes a teacher intends to establish.
Condition #3:	Each objective must be stated at an appropriate level of generality.
Condition #4:	Each objective must be stated in concise terms.
Condition #5:	Course objectives must be written and communicated to students in advance of instruction.

- LIMITS OF THE BEHAVIORAL OBJECTIVES APPROACH -

Although a teacher may be skilled in expressing instructional goals in behavioral terms, he may be unaware of the conditions listed in Table 1. As a result, the list of course objectives which he formulates may violate one or more of these conditions. Such violations are almost certain to decrease the effectiveness of the behavioral objectives approach. In fact, the use of behavioral objectives may inhibit rather than facilitate the instructional process when one or more conditions has been flagrantly violated.

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*There are additional requisite conditions which must be satisfied whenever a teacher uses behavioral objectives within a mastery framework or as a basis for criterion-referenced evaluation. In mastery learning, for example, there must be some meaningful basis for determining when a student has satisfied a given objective. However, in this paper we will limit our discussion to the conditions which must be satisfied in either a mastery or a nonmastery approach to instruction.

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Condition #1: The Overall List of Course Objectives Must Include Every Outcome the Teacher Hopes to Establish

Because students will often focus strictly on stated objectives, it is apparent that the list of objectives for each unit or for an entire course should include every learning outcome the teacher deems desirable. Those goals which a teacher fails to communicate will receive little, if any, of the student's attention. Most teachers who write behavioral objectives are aware of this condition and therefore make a concerted effort to include all desired "cognitive" and "psychomotor" outcomes in the list of course objectives. However, there is typically less assurance that the statement of course objectives will include every desired "affective" outcome.

It seems reasonable to contend that all teachers should be concerned with affective learning (attitudes, beliefs, and values). Every teacher should attempt to enhance a student's attitude toward the subject he is presenting. Does it make sense, for example, to teach a youngster how to perform mathematical exercises if he learns to hate math in the process? In addition, teachers should be concerned with a student's attitude toward himself and others; the acceptance or rejection of dominant values in society; etc. In more specialized fields, a teacher might be concerned with the development of more specific attitudes such as an appreciation for classical music, modern art, or the Bill of Rights. Although most would agree with this assertion, affective goals are rarely included in statements of course objectives. Despite problems in assessing affective outcomes, a teacher who adopts the behavioral objectives approach can ill afford this oversight. The failure to describe "affective" outcomes suggests they have little or no significance. In short, teachers must strive to include every desired learning outcome - "cognitive", "psychomotor", and "affective" in their statement of course objectives.

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Condition #2: Each Objective Must Accurately Describe the Behavior Which Reflects the Learning Outcomes a Teacher Intends to Establish

It is crucial that the behavior described in a given behavioral objective corresponds to the learning outcomes a teacher wishes to establish! This assertion seems deceptively obvious. However, this condition may be easily overlooked during the process of translating nonbehavioral goals into behavioral terms. As a result, there may be a marked discrepancy between the learning outcomes described in behavioral objectives and those which teachers intend to establish.

Suppose, for example, that a teacher translates the objective "Understands the causes of the Civil War" into the behavioral objective, "Lists at least four important causes of the Civil War." Given this statement, a student is apt to memorize a list of causes with no apparent "understanding" of the conditions which gave rise to the Civil War. Or imagine that a teacher translates the goal into the following behavioral objective, "Writes and defends his answer to the following question, 'What economic conditions contributed to the onset of the Civil War?' " When an objective provides an exact description of the evaluation process, students will be able to prepare and "memorize" their responses prior to the examination. Hence there is a marked discrepancy between the behavior described in both of these objectives and the learning outcome which the teacher intended to establish. Therefore a better translation might be:

> "Given any two events which occurred prior to the Civil War, the student will determine which event contributed most to the onset of the war and will satisfactorily defend his selection."

OR

> "Given a fictious historical event which might have occurred prior to the Civil War, the student will determine whether the occurence of the event would have increased or decreased the likelihood of the onset of the war and will satisfactorily defend his position."

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It is probably reasonable to conclude that a student who can satisfy either of the objectives listed above does, in fact, "Understand the causes of the Civil War."

In general, it is easier to write behavioral objectives which require students to recall information than to write objectives which demand higher "levels of understanding" such as application, analysis, or evaluation. For this reason, it is not unusual to find frequent discrepancies between the learning outcomes described in behavioral objectives and the more advanced cognitive outcomes which teachers intend to establish. A teacher should therefore carefully consider any behavioral objective which involves recall to determine if, in fact, the statement describes the learning outcome the teacher really wishes to establish.

We have suggested that a teacher should be able to accurately describe desired behavioral outcomes which involve fairly specific cognitive skills. However, if a teacher's true intent is to develop general cognitive skills such as "expresses human emotions in literary form" or affective behaviors such as a "greater appreciation for Beethoven's music" it may be impossible to accurately describe all the behavior from which one can infer acquisition of the objective. This point will be expanded and clarified under the discussion of condition 3.

Condition #3: Each Objective Must Be Stated At An Appropriate Level of Generality.

The behavior described in a given objective may range from very general to very specific. Consider the following statements of the same general goal:

TABLE 2: STATING OBJECTIVES AT VARYING LEVELS OF GENERALITY - AN ILLUSTRATION:

Nonbehavioral Statement: "Develop skills in simple addition."
Behavioral Statements:

A) "The student will solve simple addition problems."

B) "The student will solve addition problems involving one digit numbers."

C) "The student will solve addition problems involving two numbers whose sum is less than ten."

D) "The student will solve the first five problems on page 21 of the textbook."

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Notice the clear progression in the specificity of behavior which is described at each of the four levels. Faced with these options, a teacher must determine the most suitable level of generality at which to describe desired outcomes. As a general rule of thumb, objectives should be specific enough to provide direction to teachers and students, and yet general enough to allow meaningful inferences about student performance.

When this guideline is applied to the set of behavioral objectives cited in Table 2, it should be apparent that statement A is too general. General goals of this type do not provide teachers with a clear focus for the development of instructional strategies and penalize students by their failure to describe desired outcomes in precise terms. Further, whereas attempts to assess student performance in relation to general goals may provide meaningful inferences about a student's general knowledge or skills, such efforts will fail to provide reliable evidence of an individual's specific competencies such as the ability or inability to add one digit numbers.

Statement D, on the other hand, is far too specific. This objective suggests that a student can concentrate on a set of five problems and learn only five solutions. Objectives of this type provide too much direction. It is also probable that such statements fail to describe the learning outcomes which a teacher intends to establish. As a result, tests based on very specific objectives fail to provide meaningful inferences about student competencies. The only inference which may be made from a test based on Objective D, for example, is that a given student does or does not know the answers to this particular set of five problems.

Objectives B and C do satisfy the above guideline. First, these objectives are specific enough to provide direction to teachers and students. Second, tests based on objectives at these two levels can provide meaningful inferences about both general abilities and specific abilities of individual students. A test

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based on Objective B, for example, could determine whether or not a given student can solve addition problems involving one digit numbers; a test based on Objective C could likewise identify students who can add numbers whose sum is less than ten. Further, by constructing a test which contains a representative sample of all sub-objectives at a given level of generality, it would be possible to determine a youngster's general ability to solve simple addition problems. Finally, whereas objectives at these two levels are specific enough to provide direction to students and teachers, they are not so specific that students can find easy shortcuts to follow in satisfying the objective.

Behavioral objectives should provide a general description of the evaluation process. They ordinarily should NOT provide an exact description of the evaluation procedure!* Thus, the statement, "Circles the nouns in a given list of ten sentences" is an acceptable objective; the statement, "Circles the nouns in the following list of ten sentences: (all ten sentences listed)" is not. As noted earlier, when an objective provides an exact description of the evaluation process, students will be abl to prepare and "memorize" their responses prior to the examination. Hence objectives of this type demand a "recall" level of understanding.

In brief, teachers should describe desired outcomes in terms which are specific enough to provide direction to students and teachers and yet general enough to yield meaningful inferences regarding the competencies of individual students. To accomplish this the following guideline is useful:

> For maximum instructional effectiveness, the set of objectives corresponding to a given instructional goal must be reasonably short and yet must adequately depict or represent the full range of behaviors implied by that goal.

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*Exceptions would be for some very specific objectives such as learning the letters of the alphabet.

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With this guideline in mind, consider Table 4 below:

TABLE 4: EXPRESSING INSTRUCTIONAL GOALS AS A COLLECTIVE SET OF BEHAVIORAL OBJECTIVES

1. Intended Instructional Goal: "The student will develop skills in simple addition."

   Corresponding Set of Behavioral Objectives:

   a) "The student will solve addition problems involving one digit numbers."

   b) "The student will solve addition problems involving two digit numbers."

   c) "The student will solve addition problems involving three digit numbers."

   d) "The student will solve addition problems involving numbers with four or more digits."

   Intended Instructional Goal: "The student will express human emotions in literary form."

   Corresponding Set of Behavioral Objectives:

   a) "The student will write a composition which satisfactorily expresses a feeling of loneliness."

   b) "The student will write a composition which satisfactorily expresses a feeling of hostility."

   c) "The student will write a composition which satisfactorily expresses a feeling of love."

   Intended Instructional Goal: "The student will develop a greater appreciation for Beethoven's music."

   Corresponding Behavioral Objective: "As an expression of his appreciation for Beethoven's music, the student will voluntarily do one or more of the following:

   - "Attend concerts where Beethoven's music is featured."

   - "Purchase as many records of Beethoven's music as he can afford."

   - "Ask the teacher to play Beethoven's music in class."

   - "Discuss the merits of Beethoven's music with friends."

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Notice that the first set of behavioral objectives satisfies the guideline stated above. This brief list adequately depicts the full range of behaviors implied by the general skill of addition. It is therefore reasonable to conclude that a student who can satisfy all four objectives in this set has, in fact, acquired the general skill of addition.

However, the second instructional goal may be more typical of general cognitive objectives than the first. Notice that the set of behavioral objectives for this goal does NOT fully describe the desired behavior. Rather, this set of behavioral objectives depicts a REPRESENTATIVE SAMPLE of the behaviors a student would be able to demonstrate when he has acquired the "ability to express human emotions in literary form." Consequently, one can not be certain that a student who can satisfy these three objectives has, in fact, acquired the corresponding general cognitive skill. Rather the validity of this inference will depend upon a number of variables such as the extent to which the sample of behaviors is truly representative of the general skill and whether or not the students are aware of the behaviors on which they will be tested.

These same considerations apply for ALL goals within the affective domain. This follows from the fact that the existence of a particular attitude, belief, or value must be infered from an analysis of a complex PATTERN of behaviors. And the behavior pattern exhibited by an individual who adheres to a particular attitude or value may differ considerably from that of another person who shares this attitude or value! Consider, for example, the profound range of behaviors of an individual who has "developed a greater appreciation for Beethoven's music" or has "developed greater self-understanding." One Beethoven enthusiast may purchase many Beethoven records; another may attend many concerts at which Beethoven's music is played. It is therefore simply not possible to identify a fixed pattern of behavior which all who share a given attitude, belief, or value will exhibit.

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Hence we are forced to list behaviors which are INDICATIVE of the existence of a particular affect.

In short, the set of behavioral subobjectives corresponding to MANY general cognitive goals and ALL affective goals depict a REPRESENTATIVE SAMPLE of the behaviors the teacher intends to establish. This condition imposes severe restrictions on the functional utility of behavioral objectives which even the most skilled writer cannot overcome! These restrictions stem from the lack of a one to one correspondence between the behaviors the teacher intends to establish and those described in a given set of subobjectives.

First of all, it could be a serious tactical error to communicate the incomplete set of behavioral subobjectives to students. In simple terms, if you inform students that you will evaluate their general skills in some area by determining whether or not they can perform representative behaviors "A", "B", and "C", it is likely that they will develop these three behaviors and no others. It is not difficult, for example, to imagine a conscientious student writing compositions on "loneliness", "aggression", and "love" with no thought whatsoever about how other human emotions might be expressed in literary form or indeed with no recognition of the common characteristic of all three compositions. Thus the teacher will be developing three specific cognitive skills rather than general skill he intended to establish.* It is also not difficult to imagine a conscientious student buying a Beethoven record, attending a concert, and asking the teacher to play Beethoven's music in class. In this way he could satisfy his teacher even though he detests Beethoven's music!

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*This limitation would not apply under the rare condition that a teacher could obtain clear evidence that attainment of the more specific objectives will, in fact, lead to accomplishment of the more general goal.

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Second, it would be a tactical error for a teacher to focus his instruction on the representative sample of behavioral objectives. To do so would mean that the teacher is providing instruction aimed at the development of a specific set of skills when his true intention is to develop general skills. In short, the only approach which makes sense for goals of this type is to communicate and teach toward the general objective and not the specific set of behavioral objectives which correspond to this objective!

And if this is true, the only advantage of stating objectives in behavioral terms is to provide the teacher with a clear notion of appropriate evaluation procedures. All other functions of objectives may be served equally effectively by clearly stated nonbehavioral objectives such as "develops an appreciation for Beethoven's music." In other words, behavioral objectives will always facilitate EVALUATION, but will NOT always facilitate INSTRUCTION. (See Duchaster & Merrill, 1973).

Thus we agree with the suggestion that teachers should prepare two separate lists of objectives (Wight, 1972). The first should describe the learning outcomes the teacher hopes to establish. This list should serve as the focus of INSTRUCTION and may include nonbehavioral as well as behavioral objectives. The second list may describe desired behaviors or a representative sample of the behavior(s) the teacher intends to establish. This list should serve as the focus of EVALUATION and should be expressed entirely in behavioral terms.

Condition #4: Each Objective Must Be Stated In Concise Terms

When desired outcomes are described in vague or superfluous terms, students may fail to grasp the meaning of the statement. Under these conditions, behavioral objectives will provide little or no direction to students. Therefore, for maximum clarity and understanding, teachers should strive to describe desired learning outcomes in straightforward and concise terms.

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Consider the following statement:

> "Following practice in analyzing the sequential structure of various speeches, the student will listen to a 5 minute speech and will be able to correctly arrange a set of 3-8 facts or ideas presented in that speech in correct chronological order."

The likelihood that students will "understand" the meaning of this statement may be significantly improved through a series of editorial refinements. Consider first that the above statement describes both the learning process ("Following practice in analyzing the sequential structure of various speeches") and the desired learning outcome ("The ability to arrange a set of 3-8 facts or ideas presented in a speech in correct chronological order.") In general, the statement of an instructional objective should be limited to a description of the desired learning outcome. Thus, phrases such as the following should be eliminated from the statement of an instructional objective:

> "After reading Chapter 10 in the textbook . . . . . ."
> "Following class discussion . . . . . ."
> "After listening to the appropriate set of lectures . . . . . ."

A description of the learning process by which students will arrive at the expected outcome adds little or no meaning to the statement of an instructional objective and is therefore superfluous. Notice, for example, that the intent of the above objective is not altered when the description of the "learning process" is omitted:

> "The student will listen to a 5 minute speech and will be able to correctly arrange a set of 3-8 facts or ideas presented in that speech in correct chronological order."

Further, the inclusion of a description of the learning process implies that there is only one way in which students may acquire the desired behavior. The introductory phrase in the original statement, for example, suggests that students may learn to sequentially arrange facts and ideas presented in speeches ONLY through practice in analyzing the sequential structure of various speeches. Yet it is not only possible for students to develop this behavior through other means,

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it is probable that some students have already acquired this skill with no practice whatsoever!

Hence, the first step in editing behavioral objectives is to eliminate any reference to the learning process. The second step is to eliminate all superflous or awkward wording. This step calls upon teachers to fully exercise their writing talents. Perhaps the only direct aid which we can provide is to suggest that certain words or phrases which often appear in behavioral objectives may almost always be eliminated. These include:

"be able to"
"correctly"
"Upon the completion of this unit" - or other references to the date by which the behavior will be established.

Notice, for example, that the omission of the words "be able to," "correctly" and "correct" from the above objective does not alter the meaning of this statement:

"The student will listen to a 5 minute speech and will ~~be able to correctly~~ arrange a set of 3-8 facts or ideas presented in that speech in ~~correct~~ chronological order."

Other improvements may result from a concerted effort to describe desired learning outcomes in as few words as possible. Gronlund (1970) for example, argues that behavioral objectives do not need to include any reference to the learner. This reduction in wording may be easily accomplished by adding an "s" to the action verb. The above objective, for example, may be rewritten as follows:

"After listening to a 5 minute speech, arranges a set of 3-8 facts or ideas presented in that speech in chronological order."

We would further suggest that the list of course objectives which are communicated to students should be phrased as questions rather than declarative sentences. Objectives expressed in this manner are comparable to "study questions" and are typically less monotonous to read. If this suggestion is adopted, the objective might be phrased as follows:

"After listening to a 5 minute speech, can you arrange a set of 3-8 facts or ideas presented in that speech in chronological order?"

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Contrast this straightforward and concise question with the original version of the objective:

> "Following practice in analyzing the sequential structure of various speeches, the student will listen to a 5 minute speech and will be able to correctly arrange a set of 3-8 facts or ideas presented in that speech in correct chronological order."

The meaning of the original objective has not been altered. Yet through a series of editorial refinements it has been possible to describe the desired learning outcome in more concise terms which should be more easily understood by the student.

Condition #5: Course Objectives Must be Written and Communicated to Students in Advance of Instruction

In order for students to focus their efforts on desired outcomes, it is apparent that objectives must be developed and communicated to students prior to instruction. Once again for behavioral objectives this requisite condition seems deceptively obvious.

A beginning teacher, for example, would find this condition virtually impossible to satisfy. In order for a teacher to pose meaningful and realistic behavioral objectives to students, he must be very familiar with the content he is presenting and the abilities of the students with whom he is working. It may therefore be desirable for a first year teacher to pose general objectives prior to instruction and to refine and/or expand the range of these statements immediately FOLLOWING the completion of an instructional sequence. In a similar vein, a teacher who is presenting a current events course or a course which emphasizes independent study may find this condition virtually impossible to satisfy.

But these situations represent atypical limitations of the behavioral objectives approach. Perhaps a more significant position is to question whether any teacher should develop an all-inclusive list of objectives in advance of instruction. We agree with Eisner (1969) who suggests that the behavioral objectives approach makes sense for learning outcomes which involve acquisition of established information

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or skills. But when attention shifts to an exploration of the unknown or to unique, existential learning outcomes, it may be impossible and/or undesirable to develop behavioral objectives prior to instruction.

There are some instructional activities, for example, which are so rich in potential learning outcomes that a teacher may be either unwilling or unable to formulate an exhaustive list of desired outcomes prior to the experience. Field trips such as a visit to a farm, a walk through a densely populated area, or a guided tour through a natural woodlot are illustrative of this type of activity. It may be possible to identify SOME desired outcomes prior to activities of this type. But to derive a complete list of expected outcomes and to focus attention solely on these goals would render the activity comparatively sterile, void of much of the unique meaning and personal satisfaction which each youngster might otherwise experience.

The same is true for instructional activities which stress exploratory behavior. Most would agree, for example, that a great deal of meaningful learning occurs during non-directed play activities or as youngsters explore unfamiliar objects in their environment. But, by their very nature, exploratory activities of this type defy a predetermined identification of desired learning outcomes!

Since every course should include at least some high potential learning activities and should make at least some attempt to facilitate exploratory behaviors, it might be argued that a teacher should never state ALL course objectives in behavioral terms in advance of instruction. Notice that in these two situations the teacher may want each student to gain something different from the learning experience rather than all learning to do the same thing.

Under these conditions a teacher has two options. He might write objectives in terms of the learning activities themselves as Eisner (1969) suggests (example: "The student will take a field trip through a natural woodlot.") Or he might describe outcomes in more general terms followed by a list of representative behaviors

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(example: "demonstrate an increased awareness of his immediate environment by voluntarily engaging in one or more of the following behaviors . . .")

We would suggest that teachers adopt the second alternative. And again we would stress the need for a clear separation between INSTRUCTIONAL objectives and MEASUREMENT objectives. In other words, for those learning activities in which a teacher is unable or unwilling to specify specific learning outcomes in advance of instruction, he should communicate and focus upon the general goal(s) rather than specific behavioral outcomes. And if this is true, clear nonbehavioral statements will prove as valuable in instruction as their behavioral counterparts.

- AN EDITORIAL CHECKLIST -

Thus far we have considered five problems which may be associated with a statement of behavioral objectives. The editorial checklist presented in Table 3 should help teachers avert these five problems. Although this checklist is not exhaustive, it is probably reasonable to assume that the use of behavioral objectives will facilitate the instructional process when all course objectives satisfy these standards. On the other hand, it is probably also reasonable to assume that the behavioral objectives approach could inhibit, rather than facilitate, the instructional process when course objectives violate one or more of these standards.

TABLE 3: EDITING BEHAVIORAL OBJECTIVES - A CHECKLIST

1. Does your overall list of course objectives include a description of every desired learning outcome?
2. Does this objective express your true instructional intent?
3. Is the behavior you have described at a reasonable level of generality?
4. Is this objective stated in concise terms which will be easily understood by all students?
5. Are the objectives presented to the students in advance of instruction?

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SUMMARY

A teacher should describe some of his goals in behavioral terms, communicate these explicit objectives to students, focus instruction on these desired outcomes, and test for the same behaviors. This approach provides clear direction to teachers during instructional planning, provides similar direction to students during learning activities, and suggests a meaningful procedure by which to evaluate and report learning outcomes.

However, a teacher who adopts this approach must take definite steps to insure that each stated objective: (1) accurately describes his true instructional intent; (2) is stated at an appropriate level of generality: and (3) is stated in clear and concise terms. Further, a teacher must be certain that his list of course objectives is complete or he must tell students that it is not complete and indicate what is missing. If a teacher consistently fails to satisfy one or more of these editorial standards (as happens all too often in actual practice), the behavioral objectives approach is apt to inhibit, rather than facilitate, the instructional process.

Further, teachers should recognize that the behavioral objectives approach has a limited range of application in regard to instruction. Whereas an expression of course objectives in behavioral terms is apt to facilitate efforts to <u>evaluate</u> student performance in all settings, the same is <u>not</u> true for instruction. A teacher should communicate and focus instruction on stated behavioral objectives only if: (1) there is a one to one correspondence between the stated behavioral objectives and the behavior(s) the teacher intends to establish and (2) the teacher can describe the common response pattern he hopes to establish in advance of instruction.

These conditions will be easily satisfied for fairly specific cognitive outcomes. However, when attention shifts to general cognitive goals, affective behaviors, high potential learning activities, or exploratory behaviors, either or

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both of these conditions may be impossible to satisfy. In any of these situations we therefore suggest that teachers use specific behavioral objectives strictly for EVALUATION purposes. A separate list of objectives should be used for INSTRUCTIONAL purposes. This list should describe the learning outcomes the teacher hopes to establish and may include both behavioral and clearly stated nonbehavioral objectives. In other words, from an instructional point of view, MOST, but not all goals should be expressed as behavioral objectives!

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